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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/824,108	04/14/2004	David M. Chickering	MSFTP617US	6161

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EXAMINER

NGUYEN, CINDY

ART UNIT PAPER NUMBER

2161

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/824,108

Applicant(s)

CHICKERING ET AL.

Examiner

Cindy Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

This is in response to application filed on 04/14/04 in which claims 1-42 are presented for examination.

#### ***Information Disclosure Statement***

The information disclosure statement filed on May 03, 2000 is in compliance with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609. Because it has been placed in the application file, and the information referred to therein has been considered as to the merits.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Regarding claim 39, it is subject to an undue breadth rejection under the first paragraph of 35 U.S.C. 112, there is a single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the invention. Correction is required.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 3, 6, 11 and 39 recite pronoun "that" is not permitted in the claim. Correction is required.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-3, 4, 6, 7, 9-14, 16-20, 22-34, and 38-39 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

To be statutory, a claimed computer-related process must either: (a) result in a physical transformation outside the computer for which a practical application is either disclosed in the specification or would have been known to a skilled artisan, or (b) be limited to a practical application with useful, concrete and tangible result.

The claim recited a method for facilitating data perspective generation. In the above limitation, there is no physical transformation being claimed, a practical application would be established by a useful, concrete and tangible result

For it to be a tangible result, it must be more than a thought or a computation and must have a real world value rather than being an abstract idea.

It is unclear as to what kind of tangible output is obtained by using determining a topic, associating with each of document regions.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6, 26, 27, 34-38, 40-42 rejected under 35 U.S.C. 102(e) as being anticipated by Chu et al. (US 20020099581) (hereafter Chu).

Regarding claims 1, 26 38 and 40, Chu discloses: a system, a method and a computer readable medium that facilitates data perspective generation, comprising: a

component that receives user-specified input data including a target variable from a database (paragraph 0034, Chu); and a generation component that provides automatic generation of at least one conditioning variable for a data perspective of the target variable, derived from, at least in part, the user-specified input data and the database (paragraphs 0036, 0037, Chu).

Regarding claims 2 and 37, all the limitations of these claims have been noted in the rejection of claims 1 and 26 above, respectively. In addition, Chu discloses: the data perspective comprising at least one selected from the group consisting of a pivot table and an on-line analytical processing (OLAP) cube (0039-0040, Chu).

Regarding claims 3 and 34, all the limitations of these claims have been noted in the rejection of claims 1 and 26 above, respectively. In addition, Chu discloses: further comprising: a data perspective component that automatically generates the data perspective utilizing at least one automatically generated conditioning variable (0037, Chu).

Regarding claims 4 and 35, all the limitations of these claims have been noted in the rejection of claims 3 and 34 above, respectively. In addition, Chu discloses: the data perspective component additionally adjusts a user view of the data perspective automatically to enhance its presentation to a user based on, at least in part, a machine learning technique (0041, 0047, Chu).

Regarding claims 5 and 36, all the limitations of these claims have been noted in the rejection of claims 4 and 35 above, respectively. In addition, Chu discloses: wherein the system utilizes at least one user control input (0044, Chu).

Regarding claims 6 and 27, all the limitations of these claims have been noted in the rejection of claims 1 and 26 above, respectively. In addition, Chu discloses: the generation component employs at least one machine learning technique that facilitates in the automatic generation of the conditioning variable (0036, 0047, 0048, 0071, Chu).

Regarding claim 30, Chu disclose: A data packet, transmitted between two or more computer components (receive the data input may be a data table containing variables, data

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transactions as represented by the values of the target variable), that facilitates data perspective generation, the data packet comprising, at least in part, information relating to a data perspective generation system that utilizes, at least in part, user-specified data, including a target variable of a database, to automatically generate at least one conditioning variable of a data perspective of the target variable from the database (0034-0039, Chu).

Regarding claims 41 and 42, all the limitations of these claims have been noted in the rejection of claims 1 and 26 above. In addition, Chu discloses: comprising at least one selected from the group consisting of a computer (34, fig. 1), a server (OLAP server, fig. 1), and a handheld electronic device (32, fig. 1).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chu et al. (US 20020099581) (hereafter Chu) in view of Stolte et al. (US 7089266) (hereafter Stolte).**

Regarding claim 7, all the limitations of this claim have been noted in the rejection of claim 1 above. However, Chu didn't disclose: the machine learning technique identifies at least one conditioning variable for at least one selected from the group consisting of a top set and a left set of the data perspective of the target variable. On the other hand, Stolte discloses: the machine learning technique identifies at least one conditioning variable for at least one selected from the group consisting of a top set and a left set of the data perspective of the target variable (col. 26, lines 57 to col. 27, lines 25, Stolte). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include the machine learning technique identifies at least one conditioning variable for at least one selected from the group consisting of a top set and a left set of the data perspective of the target variable in the system as taught by Stolte, in the system of Chu. The motivation being enable the system provided a conceptual model of a multidimensional data set with a hierarchical structure that can be used to explore and analyze the data cube at multiple meaningful levels of aggregation.

Regarding claim 8, all the limitations of this claim have been noted in the rejection of claim 1 above. In addition, Chu/Stolte discloses: the conditioning variable is controllable via a user control input (0044, Chu).

Regarding claim 9, all the limitations of this claim have been noted in the rejection of claim 7 above. In addition, Chu/Stolte discloses: the machine learning technique identifies the conditioning variable based on its ability to predict the target variable versus the complexity of the conditioning variable(s) (0071, 0073, 0075, Chu).



Regarding claim 10, all the limitations of this claim have been noted in the rejection of claim 9 above. In addition, Chu/Stolte discloses: the machine learning technique additionally applies utility of a variable in identifying the conditioning variable (0075, 0084, Chu).

Regarding claim 11, all the limitations of this claim have been noted in the rejection of claim 7 above. In addition, Chu/Stolte discloses: the machine learning technique employs at least one complete decision tree that facilitates in identification of the conditioning variable (0036-0048, Chu).

**Claims 12-25, 28, 29, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chu et al. (US 20020099581) (hereafter Chu) in view of Honarvar et al. (US 6430545) (hereafter Honarvar).**

Regarding claim 12, all the limitations of this claim have been noted in the rejection of claim 11 above. However, Chu/Stolte discloses: the machine learning technique utilizes at least one heuristic method to construct the complete decision tree. On the other hand, Honarvar discloses: the machine learning technique utilizes at least one heuristic method to construct the complete decision tree (col. 12, lines 55 to col. 13, lines 17, Honarvar). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include the machine learning technique utilizes at least one heuristic method to construct the complete decision tree in the system as taught by Stolte, in the system of Chu. The motivation being enable the method for aggregating and translating the data into a multidimensional data

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model to support the use of OLP technology the OLAP technology can be applied to evaluate the aggregated data (col. 13, lines 5-18, Honarvar).

Regarding claim 13, all the limitations of this claim have been noted in the rejection of claim 7 above. In addition, Chu/Stolte/Honarvar discloses: the conditioning variable comprising at least one selected from the group consisting of a discrete conditioning variable and a continuous conditioning variable (col. 13, lines 18-35, Honarvar).

Regarding claim 14, all the limitations of this claim have been noted in the rejection of claim 13 above. In addition, Chu/Stolte/Honarvar discloses: the machine learning technique additionally automatically determines granularity of the conditioning variable via discretization (col. 14, lines 11-31, Honarvar).

Regarding claim 15, all the limitations of this claim have been noted in the rejection of claim 14 above. In addition, Chu/Stolte/Honarvar discloses: the granularity is adjustable via a user control input (0044, 0118, 0119, Chu).

Regarding claim 16, all the limitations of this claim have been noted in the rejection of claim 14 above. In addition, Chu/Stolte/Honarvar discloses: the machine learning technique determines the granularity of the conditioning variable based on its ability to predict the target variable versus the complexity of the conditioning variable(s) (0071-0073, Chu).

Regarding claim 17, all the limitations of this claim have been noted in the rejection of claim 16 above. In addition, Chu/Stolte/Honarvar discloses: the machine learning technique additionally applies utility of a granularity of a conditioning variable in identifying the granularity of the conditioning variable (0073, Chu).

Regarding claim 18, all the limitations of this claim have been noted in the rejection of claim 16 above. In addition, Chu/Stolte/Honarvar discloses: the machine learning technique employs at least one complete decision tree that facilitates in determination of the granularity of the conditioning variable (0036-0048, Chu).

Regarding claim 19, all the limitations of this claim have been noted in the rejection of claim 18 above. In addition, Chu/Stolte/Honarvar discloses: the machine learning technique utilizes at least one heuristic method to construct the complete decision tree (0037, 0038, Chu).

Regarding claim 20, all the limitations of this claim have been noted in the rejection of claim 13 above. In addition, Chu/Stolte/Honarvar discloses: the machine learning technique automatically determines at least one range of the continuous conditioning variable and represents the range as a new conditioning variable (col. 14, lines 10-32, Honarvar) .

Regarding claim 21 all the limitations of this claim have been noted in the rejection of claim 20 above. In addition, Chu/Stolte/Honarvar discloses: the range is adjustable via a user control input (0044, Chu).

Regarding claim 22, all the limitations of this claim have been noted in the rejection of claim 20 above. In addition, Chu/Stolte/Honarvar discloses: the machine learning technique determines the range of the continuous conditioning variable based on its ability to predict the target variable versus the complexity of the conditioning variable(s) (col. 13, lines 68 to col. 14, lines 10, Honarvar).

Regarding claim 23, all the limitations of this claim have been noted in the rejection of claim 22 above. In addition, Chu/Stolte/Honarvar discloses: the machine learning technique

additionally applies utility of a range of a continuous variable in identifying the range of the continuous conditioning variable (col. 13, lines 68 to col. 14, lines 10, Honarvar).

Regarding claim 24, all the limitations of this claim have been noted in the rejection of claim 22 above. In addition, Chu/Stolte/Honarvar discloses: , the machine learning technique employs at least one complete decision tree that facilitates in determination of the range of the conditioning variable (col. 13, lines 68 to col. 14, lines 10, Honarvar).

Regarding claim 25, all the limitations of this claim have been noted in the rejection of claim 24 above. In addition, Chu/Stolte/Honarvar discloses: the machine learning technique utilizes at least one heuristic method to construct the complete decision tree (0037, 0038, Chu).

Regarding claim 28, all the limitations of this claim have been noted in the rejection of claims 27, 7, 9, 16 and 22, 11 above. Therefore, it is rejected as above.

Regarding claim 29, all the limitations of this claim have been noted in the rejection of claims 28, 24 and 25 above. Therefore, it is rejected as above.

Regarding claim 32, all the limitations of this claim have been noted in the rejection of claim 28 above. In addition, Chu/Stolte/Honarvar discloses: further comprising: adjusting, based on at least one user control input, at least one selected from the group consisting of a conditioning variable, a granularity of a conditioning variable, and a range of a continuous conditioning variable (col. 13, lines 68 to col. 14, lines 53, Honarvar).

Regarding claim 25, all the limitations of this claim have been noted in the rejection of claim 24 above. In addition, Chu/Stolte/Honarvar discloses: further comprising: applying a

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utility value to facilitate in identifying and/or determining at least one selected from the group consisting of a conditioning variable, a granularity of a conditioning variable, and a range of a continuous conditioning variable (col. 13, lines 68 to col. 14, lines 53, Honarvar).

***Allowable Subject Matter***

Claims 30 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the heuristic method comprising: learning a single decision tree comprising the complete decision tree; converting the single decision tree into a set of predictor variables and corresponding values for the predictor variables; and searching over at least one sub-tree of the single decision tree to find at least one optimum set of predictor variables and their granularities as recited in claim 30.

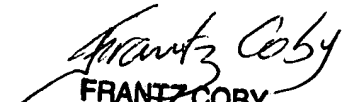
***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cindy Nguyen whose telephone number is 571-272-4025. The examiner can normally be reached on M-F: 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gaffin Jeffrey can be reached on 571-272-4146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

(N)  
Cindy Nguyen  
October 4, 2006

  
FRANTZ COBY  
PRIMARY EXAMINER